International Standardized Profiles

Neal Laurance

EuroSTEP America

January, 1999

ISP

Described in ISO TR 10000

 Part 1 - ISP Framework

 Part 2 - Taxonomy

 **Part 3 - Principles and Taxonomy for Open
   System Environment Profiles**

**ISO/IEC JTC 1/SGFS N 201 - ISP Approval and
  Maintenance Process**

ISP

What is the problem the ISP is trying to solve?

The OSI Communication Stack

Application
Presentation
Session
Transport
Network
Data Link
Physical
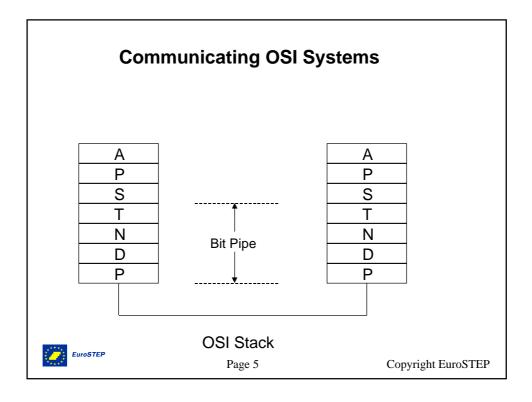
Bit Pipe

Communicating OSI Systems

A		A
P		P
S		S
T	Bit Pipe	T
N		N
D		D
P		P

OSI Stack

Communicating IP/TCP Systems

A		A
T		TCP
N	Bit Pipe	IP
D		D
P		P

Internet Stack

```
┌─────────┐          ┌─────────┐
│    A    │          │    A    │
└────┬────┘          └────┬────┘
     │      Socket        │
     └────────────────────┘
```

IP/TCP Application Connection

```
┌──────────────┐      ┌──────────────┐
│ Application  │      │ Application  │
├──────────────┤      ├──────────────┤
│ Presentation │      │ Presentation │
├──────────────┤      ├──────────────┤
│  Session     │      │  Session     │
└──────┬───────┘      └──────┬───────┘
       │       TSAP          │
       └─────────────────────┘
```
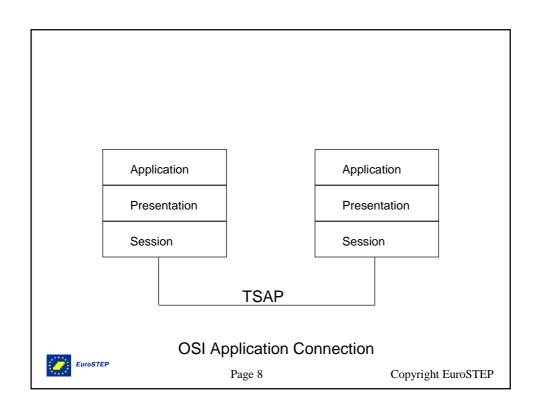
OSI Application Connection
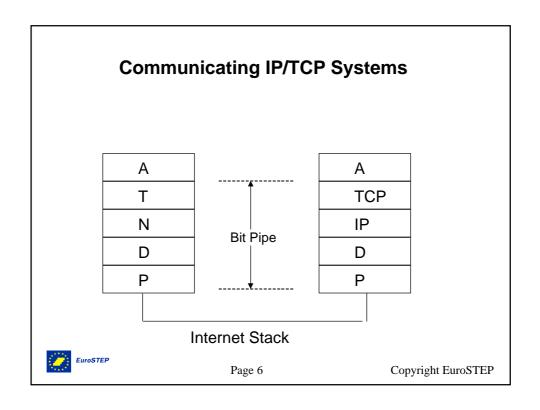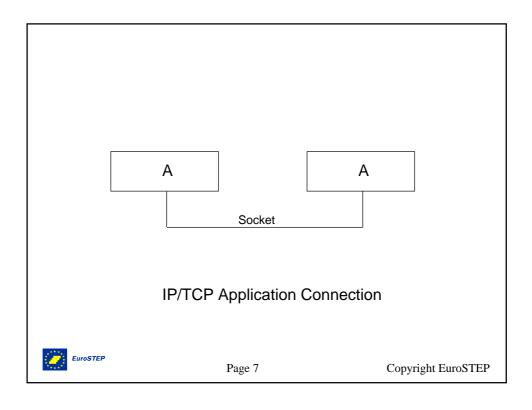
Concept of a Layer

Each layer in the model performs a specific set of functions to support communication. It does this by offering a set of services to its superior.
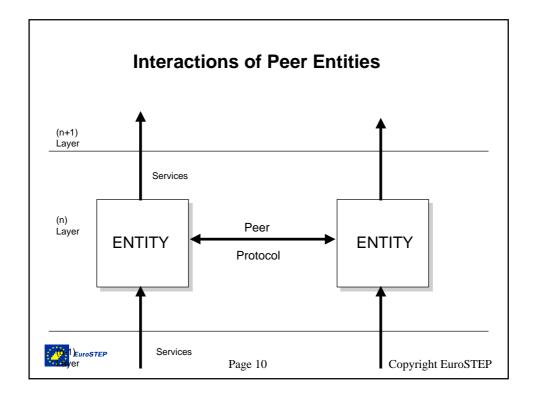
It carries out its functions by:
      1. Sending and receiving messages from its peer;
      2. Using services supplied by its sub-ordinate layer.

Since each layer does not have a real connection to its peer, it relies on its sub-ordinate layer to transmit the messages for it.

Conversely, one of the services each layer must offer is the transport of a message on behalf of its superior to the superior's peer.

EuroSTEP

Interactions of Peer Entities

(n+1)
Layer

Services

(n)
Layer

| ENTITY | Peer → ← Protocol | ENTITY |

Services

EuroSTEP

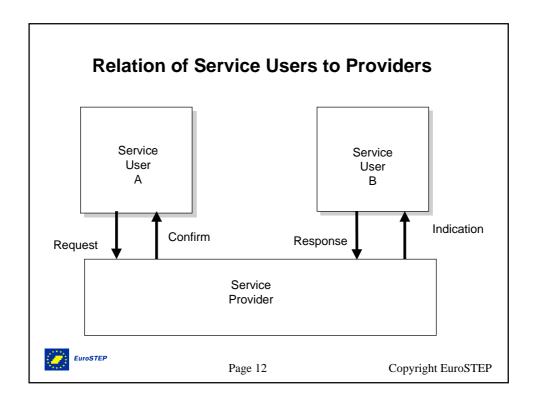# Services and Protocol

Services are specified only in abstract terms
      function to be performed
      parameters of the service request

There is no specification of the form of the parameters, nor how they are to be passed between one layer and another.

Protocol, on the other hand, is specified in complete detail.

Relation of Service Users to Providers

Service User A

Service User B

Request　　　Confirm　　　Response　　　Indication

Service Provider

Users of Services

Each layer entity views the layer immediately below it as a provider of services.
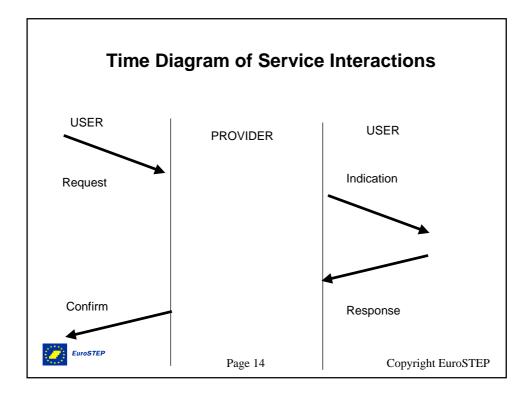
It requests a service by issuing a **Request** primitive.

In general, the provider will process this request and generate an **Indication** at the requestor's peer. The content of the **Indication** is related to the content of the **Request** and may, in fact, be identical to it.

Similarly, the responder may generate a **Response** which may result in the appearance of a **Confirm** at the requestor.

EuroSTEP

Time Diagram of Service Interactions

USER

PROVIDER

USER

Request

Indication

Confirm

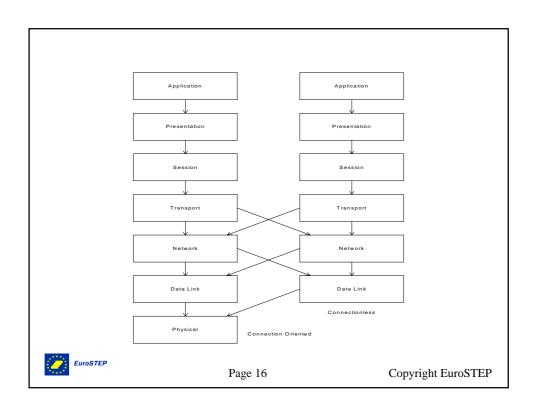Response

EuroSTEP

Mix and Match

■ Multiple Standards for each layer

   - e.g. Ethernet, RS 232, and HDLC

■ Multiple parameters for each standard

■ Connection vs. Connectionless operation

Profiles

- Upper layer profiles, Application, Presentation & Session
  - A - profile - Connection oriented
  - B - profile - Connectionless oriented
- Lower layer profiles, Transport, Network, Data Link, and Physical
  - T - profile - Connection oriented
  - U - profile - Connectionless oriented

Internet Suite

- T - profile - TCP/IP
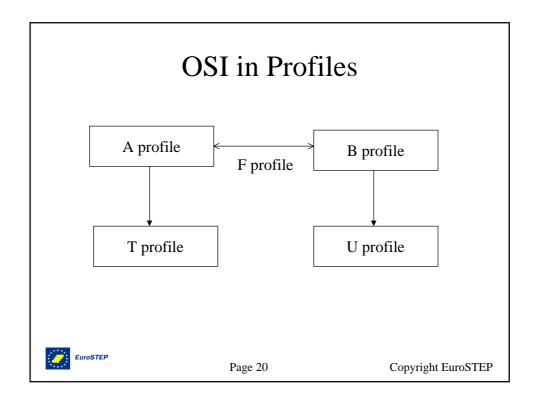- U - profile - UDP/IP

- A - profile - FTP
- B - profile - SMTP

F - profiles

■ A specification of parameters pertaining to an application protocol.

  - Mainly designed for FTAM (since withdrawn.)

■ In STEP terms,

  - Part 21 is an application protocol,
  - Part 21 + a STEP AP is an F profile.

OSI in Profiles

```
┌──────────────┐                    ┌──────────────┐
│  A profile   │<────────────────> │  B profile   │
└──────────────┘     F profile      └──────────────┘
       │                                   │
       ▼                                   ▼
┌──────────────┐                    ┌──────────────┐
│  T profile   │                    │  U profile   │
└──────────────┘                    └──────────────┘
```

History of TC 184

- In the beginning there was ISO TC 97

- TC 97 begat ISO/IEC JTC 1

- Industrial people were overwhelmed. They petitioned and got their own TC, 184

- JTC 1 became aligned with CCITT (ITU)

- JTC 1 established its own procedures, different from ISO

ISO/TR 10000

- Part 1 provides the general concepts for profiles, and specific requirements of OSI profiles.

- Part 2 provides a taxonomy of profiles for OSI.

- Part 3 provides a taxonomy for non OSI profiles, specifically OSE (POSIX) and Medical Imaging.

General Principles

- A Profile
  - shall restrict the choice of base standard options to the extent necessary to maximise the probability of interworking;
  - shall not specify any requirements that would contradict or cause non-conformance to the base standards;
  - may contain more specific conformance requirements

Main Elements

- A concise definition of the scope of the function for which the Profile is defined
- An illustration of the scenario within which the function is applicable;
- Normative references to a set of base standards
- Specifications of the application of each of the base standards
- A statement defining conformance.

OSE Specifications

- ■ Application Program Interface
  - (programmatic reference point - X.902)
- ■ Communication Service Interface
  - (interworking reference point - X.902)
- ■ Human/Computer Interface
  - (perceptual reference point - X.902)
- ■ Information Services Interface
  - (interchange reference point - X.902)

JTC 1/ SGFS

- ■ Special Group Functional Standardization

- ■ Set up special class of liaisons (S - liaisons) with OSI workshops.
  - EWOS - Europe
  - AOW - Asia Oceania
  - OIW - North America

JTC 1/SGFS N 201

■ Defines procedure for adopting ISP
   - A proposed draft ISP (PDISP) can be submitted by:
      » A or S liaisons to JTC1/SGFS
      » SCs within ISO/IEC JTC1
      » An ISO or IEC Technical Committee
      » JTC1/SGFS P - members

JTC 1/SGFS N 201 (2)

■ Target time for adoption is 7 - 10 months after submission

■ 3 month notice is required before submission so that the review process can be set up

JTC 1/SGFS N 201 (3)

■ The PDISP shall be accompanied by an explanatory report
  - General information about the profile
  - Statement of the purpose of the profile
  - Statement on relationship of profile to others
  - Description of the development process, including the degree of international harmonization achieved

PDISP Review

■ SGFS establishes a review group to review the PDISP. This group shall produce a review report of the PDISP in 2 months.

■ If the review is favorable, the document becomes a DISP.

■ This is followed by a 90 day letter ballot of SGFS members. - Done

ISO/TC 184/SC 5 N 426

- ISP approval and maintenance process, December 1994
- A PDISP can be submitted by
  - S-liaisons to TC 184/SC 5
  - ISO TC 184 SCs
  - TC 184/SC 5 P members
- Explanatory report much like JTC 1

Comments on PDISP

- The document generation process is much like our STEP development process
- The Expert review is very similar to our Qualification review
- There is a single 3 month ballot, limited to P members

Demise of SGFS

- Early 1995 JTC 1 announced that SGFS would be disbanded

- Simultaneously, activity at the three workshops ceased.

- However, there are still profiles be used, if not being developed.

ISO TC 184 Resolutions

- Torino, May 1995

- Resolution 13 - ISO TC 184 will enter into cooperation with JTC 1, modeled on the agreement between JTC 1 and ISO/TC 46, and assigns the responsibility for coordination of actions to SC 5.

ISO TC 184 Resolutions

■ Torino, May 1995

■ Resolution 14 - ISO TC 184 delegates to SC
5 responsibility for operating this agreement
in areas of communication including MMS,
CAN, and TCCS

NEXT ?

Do not let anything evade your eyes,
Plagiarize, plagiarize, plagiarize

Tom Lehrer